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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,830	06/17/2005	Yvonne Heischkel	271997US0PCT	5858
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
GILLESPIE, BENJAMIN				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/539,830

Applicant(s)

HEISCHKE ET AL.

Examiner

BENJAMIN J. GILLESPIE

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,11,12 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,11,12 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1, 3-8, 11-12, 17-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 and 19 contain the language “at least one compound (M) comprising one or more isocyanate-reactive groups... the amount of (M) ranges from 0.2 to 0 mol” however, the language stating “at least one compound (M)” and “the amount of (M) ranges from 0.2 to 0 mol” render the claims indefinite. Initially (M) is held as a required component, but the range 0.2 to 0 mol renders (M) as an optional component.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-8, and 11-12, 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neuhaus et al ('604) in view of Lokai et al ('983) and in further view of Paulus et al ('991). Neuhaus et al teach radiation-curable urethane acrylates based on the reaction product of (A) polyisocyanate, (B) hydroxyl-functional polyester acrylate, (C) hydroxyethyl acrylate, as well as additional (D) isocyanate reactive compounds, which is taken

to satisfy applicants' (M) compound (Abstract; col 3 lines 52-54, 57; col 4 lines 60-62; col 5 lines 4-9).

3. Component (A) consists of 2,6-tolylene diisocyanate, isophorone diisocyanate, and diisocyanato-dicyclohexylmethane, and component (B) is the reaction product of (Bi) alkoxyated polyol, such as trimethylol propane, and (Bii) (meth)acrylic acid, wherein (Bi) is present by 2 mols for every 1 mol of (Bii) and the degree of alkoxylation for (Bi) ranges from 3 to 4.5 (Col 2 lines 45-51; col 3 lines 5, 7, 9-10, 30-36, 47-51). Component (D) consists of additional hydroxylalkyl(meth) acrylate, and is present in an amount ranging from 0 to 40% by weight, which is taken to satisfy applicants' claimed 0 to 0.2 mol range (col 5 lines 36-41). Finally, patentees teach the urethane acrylates are useful in coating substrates, such as wood, plastic, and leather materials (Abstract). Neuhaus et al fail, however, to teach applicants' claimed epoxide modification step (k) or the corresponding acid and OH numbers.
4. Lokai et al also teach wood coatings comprising radiation-curable urethane acrylates comprising the reaction product of (A) polyisocyanate and (B) hydroxyl-functional polyester acrylate, wherein (B) is produced by first reacting alkoxyated polyol, such as trimethylolpropane, trimethylolethane, or pentaerythritol, with (meth)acrylic acid in the presence of catalyst, polymerization inhibitor, and solvent that forms an azeotrope with water, wherein the alkoxyated polyol has a range of ethoxylation between 1 and 30 and is present relative to the (meth)acrylic acid in a molar range of 1:1.1 (Col 2 lines 17-18, 61-62, 66-67, col 3 lines 9-12, col 4 lines 6-17, 50, and col 5 lines 18-20). The esterification reaction may not go to completion, and regarding the claimed removal of water, it should be noted that esterification reactions

inherently possesses the step of water removal in order to for the reaction to progress. (Col 5 lines 26-29).

5. The product of step a) is then neutralized and has the solvent and excess acrylic acid removed by distillation (Col 5 lines 30-31, and 45-46). The purified reaction product is then b) reacted with bisphenol A diglycidyl ether, butanediol diglycidyl ether or pentaerythritol triglycidyl ether in the presence of appropriate catalysts with resulting OH and acid numbers between 40 and 150 mg KOH/g and less than 10 mg KOH/g respectively (Col 6 lines 1-2, 23-25, 34-35, 38-39, 49-50 and col 11 lines 41-43). Patentees go on to teach that this step gives enhances control over the desired acid number since the epoxy groups consume excess carboxylic acid groups (Col 6 lines 1-7). The reaction product from step b) is then reacted with polyisocyanate in the presence of a catalyst, wherein the polyisocyanate consists of hexamethylene diisocyanate and/or isophorone diisocyanate (Col 6 lines 61-63, col 7 lines 23-24, 31-33, col 8 lines 22-24).

6. Therefore, it would have been obvious to include applicants step k) in Neuhaus et al since it is disclosed as being useful in producing analogous polyester-acrylates since it enhances control in obtaining the desired acid number. With that said, the examiner notes the prior art still fails to explicitly teach the fully or partially esterified alkoxyated polyol, as well as completely unreacted (meth)acrylic acid corresponding to the ranges of claims 1 and 19.

7. Therefore, the examiner directed applicants' attention to Paulus et al, which teach compositions comprising light esters of acrylic acid and/or meth-acrylic acid, which when used in urethanes, are useful in wood coatings (Abstract; col 2 line 38; col 4 lines 52-58). In particular, patentees explain that these esters are generally prepared by reacting acrylic acid with

hydroxyl containing compound, and depending on whether free OH or additional acrylate compounds are desired, one of ordinary skill would modify the ratio OH groups relative to the acrylic acid (Col 2 lines 42-48).

8. Therefore, it would have been obvious to have an excess of hydroxyl containing material relative to the acrylic acid in step one of Lokai et al in view of Neuhaus et al since it would preserves free OH groups, necessary to react with the epoxy compounds of step two. What's more, based on this logic and the fact that Lokai et al specifically teach the esterification reaction does not have to go to completion, it would have been obvious to arrive at the ranges of claim 13 because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesh*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

9. Applicant's arguments filed 10/28/2008 have been fully considered but have been rendered moot in view of the newly presented rejection. Specifically Neuhaus et al teach reactants corresponding to applicants' claimed (K) and (M) compounds.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

B. Gillespie